

### **REMARKS**

This paper responds to the Office Action mailed on March 22, 2005.

Claims 2, 6-8, 13, 14, 17, 19, and 22 are amended, and claims 25-36 are added. Claims 1-36 are now pending in this application.

Claim 2, 6-8, 13, 14, 17, and 22 are amended only for clarity.

Claim 19 is amended only to rewrite the claim in independent form as suggested by the Examiner.

### **§112 Rejection of the Claims**

Claims 13-24 were rejected under 35 U.S.C. § 112, second paragraph, for indefiniteness.

Applicant respectfully traverses. Applicant submits that claims 13-24 define the subject matter which Applicant regards as the subject matter of the present invention. Accordingly, Applicant requests reconsideration and withdrawal of the rejection.

### **Reservation of the Right to Swear Behind References**

Applicant maintains the right to swear behind any references which are cited in a rejection under 35 U.S.C. §§102(a), 102(e), 103/102(a), and 103/102(e). Statements distinguishing the claimed subject matter over the cited references are not to be interpreted as admissions that the references are prior art.

### **§103 Rejection of the Claims**

Claims 1-24 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Raajmakers et al. (U.S. Patent No. 6,544,900) in view of Agarwal et al. (U.S. Patent No. 6,201,276). Applicant respectfully traverses for the following reasons.

Applicant submits that the U.S. Patent No. 6,201,276 is not prior art with respect to all pending claims of the present application based on common ownership issue.

The present application is a Divisional of U.S. Application No. 09/997,920 (now U.S. Patent No. 6,664,583) filed November 30, 2001, which is a Divisional of U.S. Application No. 09/484,815 (now U.S. Patent No. 6,417,537) filed January 18, 2000. Thus, the present application has an effective filing date of January 18, 2000.

The U.S. Patent No. 6,201,276 is based on an application filed on July 14, 1988 and is issued on March 13, 2001. Since the U.S. Patent No. 6,201,276 is *issued after* the effective filing date (January 18, 2000) of the present application, the U.S. Patent No. 6,201,276 may be asserted as a reference under §102(e). A reference asserted under §102(e) that was commonly owned with an application at the time the invention was made cannot preclude patentability of the claims under 35 U.S.C. § 103, where the application has been filed on or after November 29, 1999. 35 U.S.C. § 103(c); 1233 OG 55 (April 11, 2000).

The present application was filed on October 17, 2003, which is after November 29, 1999. The present application was assigned to Micron Technology Inc. U.S. Patent No. 6,201,276 was also assigned to Micron Technology Inc. Thus, U.S. Patent No. 6,201,276 is commonly owned with the present application and is not prior art with respect to all pending claims of the present application. Hence, the common ownership of U.S. Patent No. 6,201,276 and the present application renders the proposed combination of Raaijmaker et al. and the U.S. Patent No. 6,201,276 moot. Accordingly, the issue of whether the Office Action has established a proper *prima facie* case of obviousness under § 103 has not been addressed. Applicant respectfully requests reconsideration and withdrawal of the rejection under 35 U.S.C. § 103.

Notwithstanding that the common ownership renders the proposed combination of Raaijmaker et al. and U.S. Patent No. 6,201,276 moot, Applicant submits that claims 13-22 are patentable over Raaijmaker et al. and U.S. Patent No. 6,201,276 for further reasons presented below.

Independent claim 13 recites, among other things, an oxynitride barrier layer having a barrier metal component, wherein the barrier metal component is “different” from the bottom electrode metal component.

Raajimakers et al. teach an interfacial layer or dielectric layer 362 (FIG. 5B). In column 17, lines 7-19, Raajimakers et al. teach that dielectric layer 362 is formed by oxidation or nitridation of a conductive component of a lower electrode 330. Since dielectric layer 362 of Raajimakers et al. is formed from the conductive component of the lower electrode 330, the conductive component of dielectric layer 362 and the conductive component of lower electrode 330 of Raajimakers et al. have *the same* material. In contrast, claim 13 recites, among other things, an oxynitride barrier layer having a barrier metal component, wherein the barrier metal

component is “different” from the bottom electrode metal component. Applicant is also unable to find in the proposed combination of Raajimakers et al. and Agarwal a showing or a fair suggestion of an oxynitride barrier layer having a barrier metal component, wherein the barrier metal component is “different” from the bottom electrode metal component, as claimed in claim 13. Accordingly, Applicant requests reconsideration and withdrawal of the rejection, and allowance of claim 13 and its dependent claims 14-21.

Independent claim 22 recites, among other things, a tungsten oxynitride barrier layer having a barrier metal component, wherein the barrier metal component is “different” from the bottom electrode metal component. As discussed above regarding claim 13, Raajimakers et al. teach dielectric layer 362 and a lower electrode 330 in which the conductive component of dielectric layer 362 and the conductive component of the lower electrode 330 of Raajimakers et al. have *the same* material. Applicant is also unable to find in the proposed combination of Raajimakers et al. and Agarwal a showing or a fair suggestion of a tungsten oxynitride barrier layer having a barrier metal component, wherein the barrier metal component is “different” from the bottom electrode metal component, as claimed in claim 22. Accordingly, Applicant requests reconsideration and withdrawal of the rejection, and allowance of claim 22 and its dependent claims 23 and 24.

#### **Allowable Subject Matter**

Claim 19 was indicated to be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. § 112 set forth in the Office Action.

Claim 19 is rewritten in independent form. The rewriting claim 19 does not alter the scope of claim 19. Thus, claim 19 is in condition for allowance.

#### **New claims**

Applicant submits that new claims 25-36 do not introduce new matter. Claims 25-36 recite things at least similar to what was recited in previously presented claims 13-24. Accordingly, Applicant requests consideration and allowance of claims 25-36.

**CONCLUSION**

Applicant respectfully submits that the claims are in condition for allowance, and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney at (612) 373-6969 to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.


Respectfully submitted,

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Date 22 July 2005

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CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: Mail Stop Amendment, Commissioner of Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 22 day of July, 2005.

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